



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Northwest Region
7600 Sand Point Way N.E., Bldg. 1
Seattle, WA 98115

Refer to:
OSB2000-0298

January 29, 2001

Mr. Lawrence C. Evans
Chief, Regulatory Branch
Corps of Engineers, Portland District
ATTN: Judy Linton
P.O. Box 2946
Portland, Oregon 97232

Re: Endangered Species Act and Magnuson-Stevens Act Consultation for the Columbia Crossings
East Marina Entrance Project, Portland, Oregon (Corps No. 2000-00480)

Dear Mr. Evans:

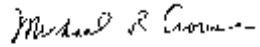
On November 17, 2000, the National Marine Fisheries Service (NMFS) received a letter from the Corps of Engineers (COE) requesting formal consultation under the Endangered Species Act (ESA) on the issuance of a permit for the Columbia Crossings East Marina Entrance Project (Corps No. 2000-00480). In that letter, the COE also requested consultation on Essential Fish Habitat (EFH) under the Magnuson-Stevens Act. The project is located at Columbia River mile 107.8, in Portland, Oregon. The proposed action is for the construction of a sheet pile diversion structure and planting of 673 trees.

Enclosed is the NMFS' biological opinion (Opinion) on the project. This Opinion addresses Snake River sockeye salmon, Snake River fall chinook salmon, Snake River spring/summer chinook salmon, Upper Columbia River spring chinook salmon, Lower Columbia River chinook salmon, Snake River steelhead, Upper Columbia River steelhead, Middle Columbia River steelhead, Columbia River chum salmon, and Lower Columbia River steelhead and constitutes formal consultation for these listed species. The NMFS has determined that the proposed action is not likely to jeopardize the continued existence of those listed species. An Incidental Take Statement provides non-discretionary terms and conditions to minimize the potential for incidental take of listed species. In addition, this document also serves as consultation on Essential Fish Habitat (EFH) for coho and chinook salmon under the Magnuson-Stevens Act and its implementing regulations (50 CFR Part 600).



If you have any questions regarding this Opinion, please contact Ben Meyer of my staff in the Oregon State Branch Office at (503) 230-5425.

Sincerely,


P.R.

Donna Darm
Acting Regional Administrator

bcc: F/NWR - K. Cunningham
F/NWR4 - File Copy, B. Meyer, M. Liverman
F/PR3 - Chief of Endangered Species
F/NWR4 - Web Page (electronic only)

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Endangered Species Act - Section 7 Consultation

BIOLOGICAL OPINION

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Magnuson-Stevens Act
Essential Fish Habitat Consultation

Columbia Crossings East Marina Entrance
(Corps No. 2000-00480)

Agency: U.S. Army Corps of Engineers - Portland District

Consultation Conducted By: National Marine Fisheries Service,
Northwest Region

Date Issued: January 29, 2001

Refer to: OSB2000-0298

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1. ENDANGERED SPECIES ACT

1.1. Background

On November 17, 2000, the U.S. Army Corps of Engineers (COE) sent a letter to Michael Crouse, of the National Marine Fisheries Service (NMFS), requesting formal consultation on the issuance of a permit to Columbia Crossings LLC. for construction of a breakwater in the Columbia River (river mile 107.8) at Portland, Oregon. Included with the letter was a biological assessment (BA) describing the effects of the project on 10 species of anadromous salmonids that are listed under the Endangered Species Act (ESA) (Table 1). Also included in the letter was a request for consultation on Essential Fish Habitat under the Magnuson-Stevens Act for coho salmon (*Oncorhynchus kisutch*) and chinook salmon (*O. tshawytscha*).

The objective of this biological opinion (Opinion) is to determine whether issuance of the proposed permit is likely to jeopardize the continued existence of salmonid species listed under the ESA, or result in the destruction or adverse modification of their critical habitat.

Table 1: Species considered in this Biological Opinion

Common Name	Scientific Name
Snake River sockeye salmon	<i>Oncorhynchus nerka</i>
Snake River spring/summer chinook salmon	<i>O. tshawytscha</i>
Snake River fall chinook salmon	<i>O. tshawytscha</i>
Lower Columbia River steelhead	<i>O. mykiss</i>
Upper Columbia River steelhead	<i>O. mykiss</i>
Snake River steelhead	<i>O. mykiss</i>
Middle Columbia River steelhead	<i>O. mykiss</i>
Lower Columbia River chinook salmon	<i>O. tshawytscha</i>
Upper Columbia River spring run chinook salmon	<i>O. tshawytscha</i>
Columbia River chum salmon	<i>O. keta</i>

1.2. Proposed Action

The proposed action is issuance of a COE permit (Corps No. 2000-00480) under both the section 404 of the Clean Water Act and section 10 of the Rivers and Harbors Act for the construction of a

150' long sheet pile diversion structure to protect the bankline from erosion and decrease shoaling at the east entrance of Columbia Crossings Marina, Portland, Oregon. The flood of 1996/1997 eroded a substantial portion of the area upstream of the entrance. This has resulted in an increase in shoaling at the entrance and increased current velocities within the marina with subsequent risks to safe navigation. The proposed project is designed to create a backwater eddy just offshore of the marina entrance in an attempt to mimic natural shoaling that occurs in the area. The structure should create a slow current area upstream, allowing for sediments to drop out prior to the marina entrance. The toe of the structure will be supported by approximately 3,500 cubic yards of Class III rip rap. Piling supports would be installed with a vibratory hammer within the approved work window of November 1 to February 28.

To compensate for habitat alteration, the applicant proposes to plant 673 trees along 750 feet of the north shore of the island that protects the marina from the Columbia River. The proposed action calls for the planting of native willows, dogwoods and alders that would augment the grasses that are currently on the island.

1.3. Biological Information and Critical Habitat

Based on migratory timing, it is not likely that listed adult or juvenile salmon or steelhead would be present during the normal in-water work period of November 1 to February 15 (the proposed construction timing). There is a potential for all listed species to utilize the area as a resting and feeding area during the juvenile outmigration after construction is completed. The proposed action would occur within designated critical habitat for all of the species.

An action area is defined by ESA regulations (50 CFR Part 402) as “all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action.” The area within critical habitat affected by the proposed action is the backwater area and the Columbia River in the vicinity of the project site. This area serves as a rearing area for juvenile salmon and as migratory corridor for both adult and juvenile life stages of all listed species under consideration in this Opinion. Essential habitat features of the area for the species are: (1) Substrate, (2) water quality, (3) water quantity, (4) water temperature, (5) water velocity, (6) cover/shelter, (7) food (juvenile only), (8) riparian vegetation, (9) space, and (10) safe passage conditions. The essential features this proposed project may affect are cover/shelter, food, riparian vegetation and safe passage conditions as a result of the structures placed in the river and trees planted along the downstream island.

References for further background on listing status, biological information and critical habitat elements can be found in Table 2.

Table 2. References for additional background on listing status, biological information, and critical habitat elements for the listed and proposed species addressed in this Opinion.

Species	Listing Status	Critical Habitat	Protective Regulations	Biological Information, Historical Population Trends
Columbia River chum salmon	March 25, 1999; 64 FR 14508, Threatened	February 16, 2000; 65 FR 7764	July 10, 2000; 65 FR 42423	Johnson <i>et al.</i> 1997; Salo 1991
Lower Columbia River steelhead	March 19, 1998; 63 FR 13347, Threatened	February 16, 2000; 65 FR 7764	July 10, 2000; 65 FR 42423	Busby <i>et al.</i> 1996
Middle Columbia River steelhead	March 25, 1999; 64 FR 14517, Threatened	February 16, 2000; 65 FR 7764	July 10, 2000; 65 FR 42423	Busby <i>et al.</i> 1996
Upper Columbia River steelhead	August 18, 1997; 62 FR 43937, Endangered	February 16, 2000; 65 FR 7764	July 10, 2000; 65 FR 42423	Busby <i>et al.</i> 1996
Snake River Basin steelhead	August 18, 1997; 62 FR 43937, Threatened	February 16, 2000; 65 FR 7764	July 10, 2000; 65 FR 42423	Busby <i>et al.</i> 1996
Snake River sockeye salmon	November 20, 1991; 56 FR 58619, Endangered	December 28, 1993; 58 FR 68543	November 20, 1991; 56 FR 58619	Waples <i>et al.</i> 1991a; Burgner 1991
Lower Columbia River chinook salmon	March 24, 1999; 64 FR 14308, Threatened	February 16, 2000; 65 FR 7764	July 10, 2000; 65 FR 42423	Myers <i>et al.</i> 1998; Healey 1991
Upper Columbia River spring-run chinook salmon	March 24, 1999; 64 FR 14308, Endangered	February 16, 2000; 65 FR 7764	July 10, 2000; 65 FR 42423	Myers <i>et al.</i> 1998; Healey 1991
Snake River spring/summer-run chinook salmon	April 22, 1992; 57 FR 34653, Threatened	December 28, 1993; 58 FR 68543	April 22, 1992; 57 FR 14653	Matthews and Waples 1991; Healey 1991
Snake River fall chinook salmon	April 22, 1992; 57 FR 34653, Threatened	December 28, 1993; 58 FR 68543	April 22, 1992; 57 FR 14653	Waples <i>et al.</i> 1991b; Healey 1991

1.4. Evaluating Proposed Actions

The standards for determining jeopardy are set forth in Section 7(a)(2) of the ESA as defined by 50 CFR, Part 402 (the consultation regulations). NMFS must determine whether the action is likely to jeopardize the listed species and/or whether the action is likely to destroy or adversely modify critical habitat. This analysis involves the initial steps of (1) Defining the biological requirements of the listed species, and (2) evaluating the relevance of the environmental baseline to the species' current status.

Subsequently, NMFS evaluates whether the action is likely to jeopardize the listed species by determining if the species can be expected to survive with an adequate potential for recovery. In making this determination, NMFS must consider the estimated level of mortality attributable to: (1) Collective effects of the proposed or continuing action, (2) the environmental baseline, and (3) any cumulative effects.

This evaluation must take into account measures for survival and recovery specific to the listed salmon's life stages that occur beyond the action area. If NMFS finds that the action is likely to jeopardize, NMFS must identify reasonable and prudent alternatives for the action. Furthermore, NMFS evaluates whether the action, directly or indirectly, is likely to destroy or adversely modify the listed species' critical habitat. The NMFS must determine whether habitat modifications appreciably diminish the value of critical habitat for both survival and recovery of the listed species. The NMFS identifies those effects of the action that impair the function of any essential element of critical habitat. The NMFS then considers whether such impairment appreciably diminishes the habitat's value for the species' survival and recovery. If NMFS concludes that the action will adversely modify critical habitat, it must identify any reasonable and prudent alternatives available. For the proposed action, NMFS's jeopardy analysis considers direct or indirect mortality of fish attributable to the action. NMFS's critical habitat analysis considers the extent to which the proposed action impairs the function of essential elements necessary for adult and juvenile migration of the listed species under the existing environmental baseline.

1.4.1. Biological Requirements

The first step in the method NMFS uses for applying the ESA standards of § 7 (a)(2) to listed salmon is to define the species' biological requirements that are most relevant to each consultation. The relevant biological requirements are those necessary for the listed species to survive and recover to naturally reproducing population levels at which protection under the ESA would become unnecessary. Adequate population levels must safeguard the genetic diversity of the listed stocks, enhance their capacity to adapt to various environmental conditions, and allow them to become self-sustaining in the natural environment.

For this consultation, the biological requirements are increased migration survival and improved habitat characteristics for resting and feeding that function to support successful migration.

1.4.2. Environmental Baseline

The biological requirements of the listed species are currently not being met under the environmental baseline. Their status is such that there must be a significant improvement in the environmental conditions of the critical habitat (over those currently available under the environmental baseline). Any further degradation of these conditions could have a significant impact due to the amount of risk the listed salmon presently face under the environmental baseline.

1.5. Analysis of Effects

1.5.1. Effects of Proposed Action

The mainstem Columbia River is an important migration route for numerous species of anadromous fish. Steelhead juveniles are normally found mid-river during migration (Dawley et al. 1986). However, juvenile steelhead use backwater areas to over-winter and hold prior to migrating. Juvenile salmonids (chinook salmon, and cutthroat trout) utilize backwater areas during their outmigration (Parente and Smith 1981). In addition, the presence of predatory fish may force smaller prey fish species, such as juvenile salmonids, into less desirable habitats, disrupting foraging behavior, thereby resulting in less growth (Dunsmoor et al. 1991).

Depressed stocks of fish are susceptible to further reduction as a result of predation (Larkin 1979). Control of predators may provide a prey species the ability to cross a critical abundance threshold by increasing their survival (Larkin 1979). Providing temporary respite from predation may be the best way to increase Pacific salmon abundance (Larkin 1979). A substantial reduction in predators will generally result in an increase in prey abundance (Campbell 1979). Gray and Rondorf (1986) in evaluating predation in the Columbia River Basin state that “The most effective management program may be to reduce the susceptibility of juvenile salmonids to predation by providing maximum protection during their downstream migration.”

1.5.1.1. In-water Structures

Native predator species such as northern pikeminnow (*Ptychocheilus oregonensis*), and introduced predators such as largemouth bass (*Micropterus salmoides*), smallmouth bass (*Micropterus dolomieu*), black crappie (*Pomoxis nigromaculatus*) white crappie (*P. annularis*) and, potentially, walleye (*Stizostedion vitreum*) (Ward et al. 1994, Poe et al. 1991, Beamesderfer and Rieman 1991, Rieman and Beamesderfer 1991, Petersen et al. 1990, Pflug and Pauley 1984, and Collis et al. 1995) may utilize habitat created by in-water structures (Ward and Nigro 1992, Pflug and Pauley 1984) such as pilings, dikes and breakwaters. However, the extent of increase in predation on salmonids in the Columbia River resulting from in-water structures is not well known.

Major habitat types utilized by largemouth bass include vegetated areas, open water and areas with cover such as docks and submerged trees (Mesing and Wicker 1986). During the summer bass prefer pilings, rock formations, areas beneath moored boats, and alongside docks. Bevelhimer (1996), in studies on smallmouth bass, indicates that ambush cover and low light intensities create a predation advantage for predators and can also increase foraging efficiency. Wanjala et al. (1986) found that adult largemouth bass in a lake were generally found near submerged structures suitable for ambush feeding. Bell (1991) states that predators may use sheltered areas of low velocity to attack. Ward (1992) found that stomachs of northern pikeminnow in developed areas of Portland Harbor contained 30% more salmonids than those in undeveloped areas, although undeveloped areas contained more pikeminnows.

There are four major predatory strategies utilized by piscivorous fish: they run down prey; ambush prey; habituate prey to a non-aggressive illusion; or stalk prey (Hobson 1979). Ambush predation is probably the most common predation strategy, predators lie-in-wait, then dart out at the prey in an explosive rush (Gerking 1994). Predators may use sheltered areas that provide slack water to ambush prey fish in faster currents (Bell 1991).

The proposed sheet pile dike could result in creation of habitat conducive to predaceous fish and subsequently increase the potential for further loss of out-migrating salmonids through direct predation. The effect of the structure is the creation of a slack water area that allows ambush predators to dart out and capture juvenile salmonids moving around the structure. However, the structure also may decrease juvenile mortality from predators by diverting juvenile salmonids from entering the marina proper, where existing predator habitat is available. The small amount of predator habitat suitable for ambush predation created by the pile dike should be offset by the decrease in juvenile usage of predator habitat within the marina proper.

Construction activities are not expected to result in effects to listed fish, since it is unlikely that there would be any juveniles in the area during that time.

1.5.2. Critical Habitat

As described in previous sections of this Opinion, the proposed project may affect essential features of the critical habitat of listed salmonids. The sheet pile dike may provide habitat for predaceous fish, thereby inhibiting safe passage for juvenile salmonids. The pile dike should also change flow patterns at the entrance to the marina that will minimize the need for dredging the marina entrance.

The proposed riparian plantings (as they mature) will increase survival for migrating juvenile salmonids by providing refugia during flood events. In addition, the leaf litter will add carbon to the system as well as provide a food source for salmonids through insect drift.

1.5.3. Cumulative Effects

Cumulative effects are defined in 50 CFR 402.02 as "those effects of future State or private activities, not involving Federal activities, that are reasonably certain to occur within the action area of the Federal action subject to consultation." For the purposes of this analysis, the action area encompasses the immediate area around the project site. Future Federal actions, including the ongoing operation of hydropower systems, hatcheries, fisheries, and land management activities are being (or have been) reviewed through separate section 7 consultation processes. Non-Federal actions that may take listed salmonids require authorization under section 10 of the ESA. The effects of these actions will be evaluated during the section 10 review process. Therefore, these actions are not considered cumulative to the proposed action.

1.6. Conclusion

NMFS has determined that, based on the available information, the proposed Columbia Crossings East Marina Entrance Project is not likely to jeopardize the continued existence of the species listed in Table 1 or result in the destruction or adverse modification of designated and proposed critical habitat.

The NMFS reached this conclusion based on: 1) The fact that the amount of created predator habitat will be potentially offset by decreased juvenile salmonid usage of existing predator habitat within the marina; and 2) the proposed plantings will benefit migrating juveniles through the creation of flood refugia and increased salmonid food production.

1.7. Reinitiation of Consultation

Consultation must be reinitiated if: 1) The amount or extent of taking specified in the Incidental Take Statement is exceeded, or is expected to be exceeded; 2) new information reveals effects of the action may affect listed species in a way not previously considered; 3) the action is modified in a way that causes an effect on listed species that was not previously considered; or, 4) a new species is listed or critical habitat is designated that may be affected by the action (50 CFR 402.16).

2. INCIDENTAL TAKE STATEMENT

Sections 4 (d) and 9 of the ESA prohibit any taking (harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in any such conduct) of listed species without a specific permit or exemption. Harm is further defined to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns such as breeding, feeding, and sheltering. Harass is defined as actions that create the likelihood of injuring listed species to such an extent as to significantly alter normal behavior patterns which include, but are not limited to, breeding, feeding, and sheltering. Incidental take is take of listed animal species that results

from, but is not the purpose of, the Federal agency or the applicant carrying out an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to, and not intended as part of, the agency action is not considered prohibited taking provided that such taking is in compliance with the terms and conditions of this incidental take statement.

The measures described below are non-discretionary; they must be implemented by the action agency so that they become binding conditions of any grant or permit issued to the applicant, as appropriate, in order for the exemption in section 7(o)(2) to apply. The COE has a continuing duty to regulate the activity covered in this incidental take statement. If the COE: 1) Fails to require the applicant to adhere to the terms and conditions of the incidental take statement through enforceable terms that are added to the permit or grant document, and/or (2) fails to retain the oversight to ensure compliance with these terms and conditions, the protective coverage of section 7(o)(2) may lapse.

An incidental take statement specifies the impact of any incidental taking of endangered or threatened species. It also provides reasonable and prudent measures that are necessary to minimize impacts and sets forth terms and conditions with which the action agency must comply in order to implement the reasonable and prudent measures.

2.1. Amount or Extent of the Take

The NMFS anticipates that the action covered by this Opinion has more than a negligible likelihood of resulting in incidental take of listed species because of continued predation by predaceous fish utilizing in-water structures. The subject action, however, as described in the Opinion and modified by the reasonable and prudent measures and terms and conditions, is expected to result in a decline in the extent of take. Effects of the action such as these are largely unquantifiable, but are not expected to be measurable as long-term effects on the species' habitat or population levels. The best scientific and commercial data available are not sufficient to enable NMFS to estimate a specific amount of incidental take to the listed species themselves. In instances such as these, the NMFS designates the expected level of take as "unquantifiable." Based on the information in the BA, the NMFS anticipates that an unquantifiable amount of incidental take could occur as a result of the action covered by this Opinion.

2.2. Reasonable and Prudent Measures

The NMFS believes that the following reasonable and prudent measure are necessary and appropriate to avoid take of the listed and proposed species.

1. The COE shall require that all in-water structures are constructed in such a way as to minimize their attractiveness to predaceous fish species.
2. The COE shall require that vegetation planted provides for refugia and carbon introduction.

2.3. Terms and Conditions

In order to be exempt from the prohibitions of section 9 of the ESA, the COE must comply with the following terms and conditions, which implement the reasonable and prudent measures described above. These terms and conditions are non-discretionary.

- 1a. The COE shall inspect the site at the completion of construction to ascertain if the required construction standards have been met.
- 1b. The COE shall require the applicant to place bird anti-perching devices on the top of all pilings.
2. The COE shall require that the applicant replace any dead trees yearly for a period of five years.

3. MAGNUSON-STEVENSON ACT

The Pacific Fisheries Management Council (PFMC) is one of eight regional fishery management councils established under the Magnuson-Stevens Act. PFMC develops and carries out fisheries management plans for salmon, groundfish and coastal pelagic species off the coasts of Washington, Oregon and California, and recommends Pacific halibut harvest regulations to the International Pacific Halibut Commission.

As required by the Magnuson-Stevens Act, PFMC described and identified EFH in each of its fisheries management plans. EFH includes "those waters and substrates necessary to fish for spawning, breeding, feeding, or growth to maturity." The Columbia River estuary and the Pacific Ocean off the mouth of the Columbia River were designated as EFH for groundfish and coastal pelagic species,¹ and all streams, lakes, ponds, wetlands, and other water bodies currently, or historically accessible to salmon in Washington, Oregon, Idaho, and California are designated as EFH for salmon.²

The Magnuson-Stevens Act also established an EFH consultation process. Federal agencies are required to consult with NMFS on all actions that may adversely affect EFH. The NMFS interprets the scope of these consultations to include actions by Federal agencies that occur outside designated EFH, such as upstream or upslope, but which nonetheless may have an adverse effect on habitat conditions necessary for the long-term survival of the species within EFH. The NMFS must provide

¹ Pacific Fishery Management Council, Final Environmental Assessment/ Regulatory Review for Amendment 11 to the Pacific Coast Groundfish Fishery Management Plan (October 1998), and The Coastal Pelagic Species Fishery Management Plan: Amendment 8 (December 1998). See, also, Casillas, *et al.*, Essential Fish Habitat West Coast Groundfish Appendix, National Marine Fisheries Service, 778 p. (1988).

² Pacific Fishery Management Council, Amendment 14 to the Pacific Coast Salmon Plan. Appendix A: Description and Identification of Essential Fish Habitat, Adverse Impacts and Recommended Conservation Measures for Salmon (1999).

conservation recommendations for any Federal or State activity that may adversely affect EFH. Within 30 days of receiving EFH conservation recommendations from the NMFS, Federal agencies must conclude EFH consultation by responding to NMFS with a written description of conservation measures the agency will use to avoid, mitigate or offset the impact of its action on EFH. If the Federal agency selects conservation measures which are inconsistent with the conservation recommendations of NMFS, the Federal agency must explain in writing its reasons for not following NMFS' recommendations.

The project area for the marina project occurs within the area designated as EFH for chinook and coho (*O. kisutch*) salmon and starry flounder (*Platichthys stellatus*). Information submitted by the COE is sufficient to conclude that the effects of this project on EFH are likely to be within the range of effects considered in the Endangered Species Act portion of this consultation. Based on that analysis, the NMFS finds that the proposed project is likely to adversely affect EFH for coho salmon, chinook salmon and starry flounder.

The COE has provided for minimization of the potential impacts in the design of this project. The reasonable and prudent measures and the terms and conditions outlined above in Section 8 are applicable to designated groundfish and Pacific salmon EFH. Therefore, NMFS recommends that they be adopted as EFH conservation measures.

This concludes EFH consultation for the proposed project. The COE must reinitiate this EFH consultation if discretionary Federal agency involvement or control over the action has been retained or is authorized by law and if: 1) New information reveals effects of the agency action that may affect designated EFH in a manner or to an extent not considered in this consultation; 2) the agency action is subsequently modified in a manner that causes an effect to designated EFH not considered in this consultation; or 3) new EFH is designated that may be affected by the action.

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